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Applicant Initiated Interview Request Form

Application No.: 10/789,598 First Named Applicant: David Wayne Minnich

Examiner: Tauqir Hussain Art Unit: 2452 Status of Application: Pending

Tentative Participants:

(1) Gregory A. Hunt (2) Examiner Tauqir Hussain

(3) Shandon Herring (4) _____

Proposed Date of Interview: _____ **Proposed Time:** _____ **AM/PM**

Type of Interview Requested:

(1) ☒ **Telephonic** (2) ☐ **Personal** (3) ☐ **Video Conference**

Exhibit To Be Shown or Demonstrated: ☐ **YES** ☒ **NO**

If yes, provide brief description: _____

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) Rej.	1, 10, 11, 26	Bagchi	☐	☐	☐
(2) Rej.	2, 5-10, 12, 17-21, 27, 30, 34-36	Bagchi, Chang	☐	☐	☐
(3) Obj.	26, 30, 34-36		☐	☐	☐
(4)			☐	☐	☐

☐ Continuation Sheet Attached

Brief Description of Argument to be Presented:

Bagchi and Chang fail to disclose, teach, or suggest negotiating link level alignment of processor cards within a telecommunications signaling platform as claimed.

An interview was conduction on the above-identified application on _____.

NOTE: This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

/Gregory A. Hunt/
Applicant/Applicant's Representative Signature

Gregory A. Hunt
Typed/Printed Name of Applicant or Representative

41,085
Registration Number, if applicable

_____
Examiner/SPE Signature

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: David Wayne Minnich

Group Art Unit: 2452

Serial No.: 10/789,598

Examiner: Hussain, Tauqir

Filed: February 27, 2004

Docket No.: 1322/131

Confirmation No.: 9048

For: METHODS AND SYSTEMS FOR EXTENSIBLE LINK LEVEL ALIGNMENT BETWEEN MODULES IN A DISTRIBUTED PROCESSING SYSTEM

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PROPOSED AMENDMENT IN RESPONSE TO PRE-INTERVIEW COMMUNICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is responsive to the Pre-Interview Communication dated July 1, 2009, having a term for response without extension by August 3, 2009 (August 1, 2009 being a Saturday). Favorable consideration is respectfully requested in view of the following Amendments and Remarks.

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for link level alignment of ~~processing modules~~ processor cards in a distributed processing environment, the method comprising:

(a) at a first ~~processing module~~ processor card within a telecommunications signaling platform, sending an alignment request message to a second ~~processing module~~ processor card within a telecommunications signaling platform;

(b) including, in the alignment request message, at least one link level communications protocol version supported by the first ~~processing module~~ processor card;

(c) at the second ~~processing module~~ processor card, receiving the alignment request message, selecting a link level communications protocol version based on the version in the alignment request message and parameter values for that version;

(d) sending an alignment grant message from the second ~~processing module~~ processor card to the first ~~processing module~~ processor card including the selected link level communications protocol version and the parameter values;

(e) at the first ~~processing module~~ processor card, receiving the alignment grant message, selecting link level communications parameter values based on the parameters in the alignment grant message and sending an

alignment grant acknowledgement message including the selected parameter values to the second ~~processing module~~ processor card; and

(f) sending messages between the first and second ~~processing module~~ processor card using the selected link level communications protocol version and parameter values.

2. (Original) The method of claim 1 wherein sending an alignment request message includes sending an alignment request (ARQ) link status signal unit (LSSU) including a payload, the payload including the link level communications protocol version.

3. (Canceled)

4. (Canceled)

5. (Currently Amended) The method of claim 1 comprising sending an alignment grant message from the first ~~processing module~~ processor card to a third ~~processing module~~ processor card within the telecommunications signaling platform that does not support link level communications protocol parameter negotiation.

6. (Currently Amended) The method of claim 5 comprising, at the third ~~processing module~~ processor card, formulating an alignment grant message and forwarding the alignment grant message to the first ~~processing module~~ processor card.

7. (Canceled)

8. (Currently Amended) The method of claim 6 comprising performing link level communications between the first and third ~~processing modules~~ processor cards

using a default set of link level communications protocol parameters supported by the first and third ~~processing modules~~ processor cards.

9. (Original) The method of claim 1 wherein steps (a)-(f) are performed by SS7 link interface modules in a signal transfer point.

10. (Currently Amended) The method of claim 1 wherein step (a) occurs independently of application data that the first ~~processing module~~ processor card has to send.

11. (Currently Amended) A method for negotiating link level communications parameters between ~~processing modules~~ processor cards in a distributed processing system, the method comprising:

(a) exchanging messages between first and second ~~processing modules~~ processor cards for establishing link level communications between the first and second ~~processing modules~~ processor cards, the messages including link level communications protocol parameters supported by the first and second ~~processing modules~~ processor cards;

(b) agreeing on a common set of link level communications protocol parameters usable by the first and second ~~processing modules~~ processor cards; and

(c) establishing link level communications between the first and second ~~processing modules~~ processor cards using the common set of parameters.

12. (Currently Amended) The method of claim 11 wherein exchanging messages between first and second ~~processing modules~~ processor cards includes

exchanging link status signaling units (LSSUs) between the first and second ~~processing modules~~ processor cards.

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Original) The method of claim 11 wherein the link level communications protocol parameters include at least one of a retransmission algorithm and retransmission timers.

18. (Currently Amended) The method of claim 11 wherein the link level communications protocol parameters include data rates supported by the first and second ~~processing modules~~ processor cards.

19. (Currently Amended) The method of claim 11 wherein exchanging messages between the first and second ~~processing modules~~ processor cards includes exchanging the messages independently of application data ready to be sent by the first and second ~~processing modules~~ processor cards.

20. (Currently Amended) The method of claim 11 comprising exchanging messages between the first ~~processing module~~ processor card and a third ~~processing module~~ processor card that does not support link level communications parameter negotiation and establishing communications between the first and third ~~processing modules~~ processor cards using a default set of parameters supported by the third ~~processing module~~ processor card.

21. (Currently Amended) The method of claim 20 wherein exchanging messages between the first and third ~~processing modules~~ processor cards includes exchanging link status signal units (LSSUs) between the first and third ~~processing modules~~ processor cards.

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Currently Amended) A system for link level alignment of ~~processing modules~~ processor cards in a distributed processing system, the system comprising:

(a) first and second ~~processing modules~~ processor cards within a telecommunications signaling platform coupled to a common bus and supporting link level communications parameter negotiation; and

(b) a third ~~processing module~~ processor card coupled to the bus and within the telecommunications signaling platform, the third ~~processing module~~ processor card not supporting link level communications protocol parameter negotiation, wherein the first and second ~~processing modules~~ processor cards are ~~adapted~~ configured to negotiate link level communications protocol parameters with each other and to communicate with each other using the negotiated parameters and wherein the first and second ~~processing modules are adapted to~~ processor cards communicate with the third ~~processing module~~ processor card using a default set of link

level communications protocol parameters supported by the third ~~processing module~~ processor card.

27. (Currently Amended) The system of claim 26 wherein the first, second, and third ~~processing modules each~~ processor cards comprise SS7 link interface modules or a data communications module for sending and receiving IP telephony signaling messages over IP signaling links.

28. (Canceled)

29. (Canceled)

30. (Currently Amended) The system of claim 26 wherein the first ~~processing module is adapted to send~~ processor card sends an alignment request message to the second ~~processing module~~ processor card to negotiate a link level communications protocol version.

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Currently Amended) The system of claim 26 wherein the first and second ~~processing modules are adapted to~~ processor cards discover that the third ~~processing module~~ processor card does not support link level communications parameter negotiation by exchanging link status signal units (LSSUs) with the third ~~processing module~~ processor card.

35. (Currently Amended) The system of claim 34 wherein the first and second ~~processing modules are adapted to~~ processor cards negotiate the link level communications protocol parameters by exchanging LSSUs to negotiate a

parameter exchange protocol and to negotiate the parameters using the parameter exchange protocol.

36. (Currently Amended) The system of claim 34 wherein the first and second ~~processing modules are adapted to~~ processor cards exchange messages for negotiating the link level communications protocol parameters independently of application data ready to be sent by the first and second ~~processing modules~~ processor cards.

REMARKS

Status Summary

In this amendment, no claims are added, and no claims are canceled. Therefore, upon entry of this amendment, claims 1-2, 5-6, 8-12, 17-21, 26-27, 30, and 34-36 remain pending.

Claim Rejections - 35 U.S.C. § 102

Claims 1, 10, 11, and 26 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0057713 to Bagchi et al. (hereinafter, "Bagchi"). This rejection is respectfully traversed.

Independent claims 1, 11, and 26 respectively recite methods and a system for link level alignment of processing modules in a distributed processing environment. As stated in the present specification, "link level alignment" refers to the process by which processor cards establish communications with other processor cards at the link level. (See page 5, lines 11-12.) For example, claim 1 recites a method comprising at a first processing module, sending an alignment request message to a second processing module. The alignment request message includes at least one link level communications protocol version supported by the first processing module. The method further includes at the second processing module, receiving the alignment request message, selecting a link level communications protocol version based on the version in the alignment request message and parameter values for that version. The method also includes sending an alignment grant message from the second processing module to the first processing module including the selected link level communications

protocol version and the parameter values. The method further includes at the first processing module, receiving the alignment grant message, selecting link level communications parameter values based on the parameters in the alignment grant message and sending an alignment grant acknowledgement message including the selected parameter values to the second processing module and sending messages between the first and second processing module using the selected link level communications protocol version and parameter values.

As stated in the Background section of the present specification, conventional link level alignment does not involve exchanging of capabilities information, but instead, provides that the set of parameters or algorithms used by each card in the system to communicate with other cards via an interprocessor message transport (IMT) bus is limited to the set of parameters common to the oldest or least-capable card in the system. For example, algorithms for reliable, sequenced delivery, timer values for retransmission, retransmission algorithms, buffering on the link, and data exchange rate between cards are parameters that the cards use to control link level communications with each other. If a new card with extended parameters is attached to the bus and an old card is present on the bus, because each card establishes an IMT virtual circuit with every other card and there is no capability of exchanging parameters for each IMT virtual circuit, the new card is limited to the set of parameters common to the oldest card in the system.

In contrast, each of independent claims 1, 11, and 36 recites link level alignment of processing modules in a distributed processing environment including exchanging link level communications parameters. Such negotiation allows differential alignment

between sets of cards according to the capabilities of each card set. For example, using the link level communications protocol parameter negotiation method of claim 1, card A may align with card B to use a first link level communications protocol parameter set. Card A may align with card C to use a second link level communications parameter set different from the first link level communications parameter set. Such differential alignment capabilities allows older cards to co-exist with newer cards without requiring the newer cards to downgrade to the link level communications capabilities of the older cards when the newer cards are communicating with each other.

Each of independent claims 1, 11, and 36 has been amended to recite that the link level alignment negotiation occurs between processor cards within a telecommunications signaling platform. Support for this amendment is found, for example, on page 8, lines 14-16 and page 11, lines 8-11 of the present specification. Thus, each of the claims recites negotiating link level communications capabilities between processor cards in a telecommunications signaling platform.

There is no disclosure in Bagchi of negotiating link level alignment of processor cards within a telecommunications signaling platform as claimed. Rather, Bagchi is directed to a method for selecting frame encoding parameters for transmitting a frame through a home phone-line network architecture (HPNA) based on estimates of expected network performance. That is, Bagchi discloses selecting different encoding parameters for different portions of a frame. (See Abstract of Bagchi.) Bagchi does not disclose, teach, or suggest link level alignment of processing modules.

The Pre-Interview Communication cites paragraphs [0120] – [0121], Abstract, and Figure 6 as disclosing the elements of claims 1, 11, and 26. Respectfully, Bagchi,

in the cited portions or elsewhere, does not disclose, teach, or suggest negotiating link level alignment of processor cards within a telecommunications signaling platform as claimed. Rather, Figure 6 discloses an Ethernet packet and possible modulation rates for transmitting different portions of the packet over a transmission medium (e.g., the rates at which a modem may transmit portions of a packet via unshielded twisted pair (UTP) wiring in an HPNA network) and the cited paragraphs [0120] and [0121] disclose the information stored in the fields of such a packet. (See paragraphs [0119] - [0121] of Bagchi.) There is absolutely no mention or suggestion of negotiating link layer communications parameters between processor cards within a telecommunication signaling platform as claimed. Simply stated, the above cited portions of Bagchi disclose how portions of a frame may be modulated into a carrier wave over a UTP wire by a cable modem, but does not disclose or suggest a process within a telecommunications signaling platform by which processor cards establish communications with other processor cards at the link level.

Additionally, the Pre-Interview Communication indicates that Bagchi discloses an alignment request message in Figure 11, protocol version support in paragraphs [0174] and [0159] and exchanging link level communication parameters in paragraphs [0178] and [0194]. Respectfully, Bagchi, in the cited portions or elsewhere, also does not disclose, teach, or suggest this. Instead, Figure 11 of Bagchi depicts a frame-synchronized scrambler which allows packets to be transferred via uncontrolled wires (e.g., phone UTP or powerline wires) in a CSMA/CD networks (e.g., Ethernet) with less transmission errors. That is, frame-synchronized scrambling allows receivers to detect errors or problems with transmitted data including end-of-frame detection by

randomizing sequences of packet information sent over a medium (e.g., a phone or powerline wire). (See paragraph [0139] of Bagchi.) A frame-synchronized scrambler is, thus, used for diminishing transmission errors by allowing receivers to reliably detect the end of a frame in the presence of severe channel distortion, a frame-synchronized scrambler, however, does not use or send a message for requesting link alignment of processing modules as claimed. Further, paragraphs [0174], [0159], [0178], and [0194] disclose sending control frames between stations across a home phone-line network (HPNA) and does not involve link level alignment within a telecommunications signaling platform as claimed. Thus, Bagchi fails to disclose or even suggest link level alignment of processor cards within a telecommunications signaling platform

Accordingly, it is respectfully submitted that the rejection of claims 1, 10, 11, and 26 as anticipated over Bagchi should be withdrawn.

Claim Rejections - 35 U.S.C. § 103

Claims 2, 5-10, 12, 17-21, 27, 30, and 34-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bagchi in view of U.S. Patent No. 6,959,076 to Chang et al. (hereinafter, "Chang"). This rejection is respectfully traversed.

Claims 2 and 5-10 depend from independent claim 1, claims 12 and 17-21 depend from independent claim 11, and claims 27, 30, and 34-36 depend from independent claim 26. For the reasons stated above with regards to independent claims 1, 11, and 26, Bagchi fails to disclose or suggest negotiating link level alignment of processor cards within a telecommunication signaling platform. Chang likewise lacks such teaching or suggestion. Chang is directed to providing triggerless screening

services based on call setup messages. While Chang discloses a distributed processing environment with multiple processors and connected to an IMT bus, Chang is completely silent about link level alignment between the processor cards. In fact, Chang, in the cited paragraphs or elsewhere, contains absolutely no mention of an alignment request message or any other related alignment messages such as a link status signal unit (LSSU) message. The cited portions of Chang only disclose that call setup messages may be routed internally between the modules via the IMT bus for processing related to triggerless screening service. There is, however, no mention of a process or way by which each processing module establishes communications with the other modules at the link level. Thus, Chang also fails to disclose, suggest, or teach link level alignment of processing modules in a distributed processing environment as claimed.

Further, it would not have been obvious to a person of ordinary skill in the art at the time the invention was made to use the frame-based communication method in Bagchi with the message processing platform **200** illustrated in Chang because Bagchi is directed to increasing the speed of communications over home networks and Chang is directed to a message processing platform for core networks. A person of ordinary skill in the art of telecommunication signaling would not look to protocols for home networks as disclosed in Bagchi to apply to telecommunication signaling platforms, because home networks are held to lower reliability and performance standards than telecommunication signaling platforms. Any protocol used for a home network would likely require modification and testing to meet the rigorous performance and reliability standards of a telecommunications signaling platform. Accordingly, even assuming for

the sake or argument that the combination of Bagchi and Chang yields all of the elements of any of the present claims, it would not have been obvious to a person of ordinary skill in the art at the time the invention was made to combine these documents as set forth in the Pre-Interview Communication.

Accordingly, because Bagchi and Chang both fail to disclose, teach, or suggest negotiating link level alignment of processor cards in a telecommunications signaling platform, it is respectfully submitted that the rejection of claims 2, 5-10, 12, 17-21, 27, 30, and 34-36 as unpatentable over Bagchi in view of Chang should be withdrawn.

Claims 26, 30, and 34-36

In the Pre-Interview Communication, it was requested that the phrase "adapted to" be removed from claims 26, 30, and 34-36. The phrase "adapted to" has been removed from these claims. Accordingly, it is respectfully submitted that these claims should now be allowed.

CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

DEPOSIT ACCOUNT

Although no fee is believed to be due, the Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. **50-0426**.

Respectfully submitted,

JENKINS, WILSON, TAYLOR & HUNT, P.A.

Date: August 3, 2009

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1322/131 GAH/SWH/sda